INCREASING GENERALIZATION OF STAFF INTERACTIONS THROUGH POSTED GROUP FEEDBACK, INDIVIDUAL FEEDBACK, AND SOCIAL PRAISE

An abstract of a Thesis by
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July 1977
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The problem. Staff in institutions have been trained to interact appropriately with residents during free time through feedback on their performance, but the feedback effects have not been found to generalize outside the training session. The present study sought to increase the generalization of appropriate staff-resident interactions outside the training session.

Procedure. Time-sample observations of staff-resident interactions were made twice each day in a large day hall in a state institution for the retarded, during a one-hour session and a 30-min. generalization check. The data collected were the percent of time-samples staff interacted appropriately and the percent of time-samples staff interacted with different residents. Following baseline posted group feedback and individual feedback and praise were given at the end of the session first on the percent of time-samples staff interacted appropriately and then on both this percentage and the percent of time-samples staff interacted with different residents. After a reversal to baseline the session was extended to three hours, and the presence of the observer was changed from continuous to intermittent. Feedback on both percentages was re-implemented following a short baseline.

Findings. The feedback procedure was effective in producing a large increase in appropriate staff-resident interactions in the one-hour session and a moderate increase in the three-hour session. Increasing the behavior of the staff in the session did not result in a concomitant increase during the generalization checks.

Conclusions. The failure of the behavior change to generalize outside the session limits the usefulness of feedback as a practical means of training staff. However, use of the procedure in a spot-check fashion should provide for increased staff behavior throughout the day with a minimum of cost in terms of time spent monitoring.

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A Thesis

Presented to

The School of Graduate Studies

Drake University

In Partial Fulfillment

of the Requirements for the Degree

Master of Arts

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by

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July 1977

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Chapter 1

INTRODUCTION

The training of ward staff in institutions as behavior change agents has become an important area of research in the applied analysis of behavior. Simple feedback on performance has been successfully used to increase the number of training projects completed by ward staff (e.g., Panyan, Boozer, & Morgan, 1970), the percent of active staff during free time (e.g., Graves, 1976; Poteet, 1976), and the percent of active residents during free time (e.g., Graves, 1976). Although large increases in desirable staff behaviors have been produced by other techniques (e.g., by token reinforcement using trading stamps, Bricker, Morgan, & Grabowski, 1972; by cash rewards, Pomerleau, Bobrove, & Smith, 1973), feedback is a practical and inexpensive procedure.

Recently, attention has focused on the problem of staff behavior during free times, i.e., those times during the day when there is no formal activity or programming scheduled. Free time makes up a majority of a resident's day in many institutions and therefore offers a good opportunity for learning appropriate behavior through positive interactions with staff. Unfortunately, staff activity is usually at a low level during free times, and the residents are allowed either to remain idle or to engage in

stereotypies or other non-productive behavior. Graves (1976) attempted to increase the activity of residents and the number of staff-resident interactions during free times in a ward setting by using posted feedback as the contingency on staff behavior. The average percentages of active residents and active staff were posted in the ward office following a daily observation period. Although the feedback on resident behavior resulted in an increased activity level of the residents, staff behavior was not significantly affected until feedback on both resident and staff behavior was posted. Posting feedback increased the percentages of active residents and staff on one ward by as much as 40 and 70 percentage points respectively.

Poteet (1976) attempted to increase both the quantity and the quality of staff-resident interactions during free time. Group feedback on the average percentage of staff attention to appropriate behavior emitted by the residents was posted, and individual feedback with social praise was given following daily observation periods. The feedback and praise produced a large increase in staff attention to appropriate resident behavior during free time. Thus, both studies demonstrated that a very simple procedure, posting and verbalizing feedback, can alter appreciably the quantity and quality of staff-resident interactions during otherwise non-productive periods of the day.

While staff training studies have reported data on

the effects of feedback and praise on staff behavior and even on resident behavior, data on the generalization of these effects to non-session times is usually either lacking or discouraging. In most behavior change programs changing the behavior in one situation such as the training session does not result in concommitant or subsequent changes in other settings, i.e., behavior change is highly situation-specific (Kazdin & Bootzin, 1972). Thus, one cannot merely expect a change in behavior to transfer to other settings, but rather the generalization must be programmed.

Two means of programming generalization are to equate stimulus conditions between different settings and to train other individuals in the client's environment as change agents (Kazdin, 1975). Walker and Buckley (1972) investigated generalization strategies in a classroom setting using children in grades three, four, and five as subjects. The subjects first received two months of treatment in an experimental classroom where appropriate behavior was modified with a token economy resulting in a mean increase of 45% over baseline rates for all subjects. Then the subjects were randomly assigned to different groups and returned to their regular classrooms where maintenance strategies were implemented. The maintenance strategies were equating stimulus conditions (establishment of as many common stimulus elements between the experimental and regular classrooms as possible), peer reprogramming (programming the subject's peer group to

support his attempts at appropriate behaviors and to ignore incompatible behaviors), and teacher training (providing the regular classroom teacher with training in behavior modification techniques). After two months in the regular classroom the mean percent of appropriate behavior for the peer reprogramming and equating stimulus conditions strategies were significantly greater than the mean for the control subjects. The teacher training group mean did not differ significantly from the control group mean.

Generalization of the effect of staff training to non-session times would be a highly desirable outcome of any staff training program for at least two reasons. First, generalization should facilitate greater behavior change in the residents due to increased exposure to contingencies for appropriate behavior. Secondly, if staff behavior improved in non-session times, requirements for supervisory staff to perform monitoring functions would be lessened considerably since there would be less need for close supervision. Graves (1976) reported no generalization of the treatment effects to non-session times when feedback on the percent of time staff were interacting with residents was posted following observation sessions. However, had feedback been given on the number of different residents who were active rather than the percent of time staff were active, staff might have come under discriminative control of the residents' presence and interacted with a more diverse sampling of the ward population.

And, since the residents' presence is a stimulus common to both the session and non-session settings, staff-resident interactions might generalize across the settings as in the Walker and Buckley (1972) study.

The purpose of this study was to investigate the possibility of obtaining greater generalization of increased staff activity to non-session times through varying the contingencies on staff behavior. Specifically, generalization should be greater when feedback and praise were contingent not simply on the amount and quality of staff interaction but on the amount, quality, and diversity of staff interaction, i.e., the number of different residents with whom a staff person interacts appropriately.

Chapter 2

METHOD

Subjects

The staff attendants on one living unit in a state institution for the retarded served as subjects. The attendants were four females and two males ranging in age from 21 to 55 years. The residents on the living unit were 24 males ranging in age from 20 to 53 years, all of whom functioned in the profound to severe range of retardation.

Setting

Observations took place in a large day hall of a living unit. The day hall had chairs, benches, tables, and a merry-go-round. Also, the staff often brought out activity materials such as crayons, water colors, balls, etc. The residents spent a majority of their day in this room, and most of their interactions with the staff occurred within the day hall. The number of staff present in the day hall at any one time ranged from 0 to 4, and the number of residents ranged from 10 to 20.

Procedures

Observations were made two times each day in the day hall five days each week in all conditions. Session observations were made by the experimenter for one hour in Conditions A_1, B, C, and A_2, and for three-hour sessions in Conditions

A_3 and D. The second observation, a generalization check, was made by the nurse or the attendants' supervisor for one-half hour at another time during the shift. The session observations took place at the same time each day, from 9:00-10:00 AM in the first four conditions and from 8:00-11:00 AM in the last two conditions. These session times were chosen because no formal programming or planned activities were scheduled during this period, and the staff were free to interact with the residents. The generalization checks were made at other times during the shift when there were no activities or programming scheduled which were usually between lunch and the end of the shift. The staff were not informed of the generalization checks.

The observation procedure was the same for both the session and the generalization checks. The procedure consisted of the observer briefly observing each staff member in the day hall and recording (a) the initials of each staff member, (b) the initials of the resident being interacted with, and (c) whether the interaction was appropriate or inappropriate. These time-sample observations were taken every five minutes for all generalization check conditions and the first four session conditions. In the last two conditions of the session, the time-sample observations were made randomly on the average of every 15 minutes. Since the session was three times longer in the last two conditions, the observations were made less frequently in order to

control for the number of observations made per session across all conditions. The only difference in procedure between the session and the generalization check was that in the first four conditions the experimenter sat in the day hall at a table and observed for the entire hour, whereas the generalization observers simply entered the unit, made the observation, and then left. The latter method was used by the experimenter as well in the last two conditions of the session.

The percent of time-samples each staff member was interacting appropriately and the percent of time-samples each staff member interacted with different residents were computed for the session and the generalization check each day. Group percentages were obtained by averaging the individual staff percentages. Twelve observations were made of the group during the sessions and six during generalization checks. However, routine ward duties often interfered with staff members' opportunity to interact or be in the day hall, so the actual number of observations made for each staff member was usually between 8 and 10 during sessions and between 3 and 5 during generalization checks.

Response Definitions

Staff behavior. An appropriate interaction was recorded if a staff member smiled, praised, gave affectionate physical contact or materials to, or played a game with a

resident who was behaving appropriately. If a staff member was playing a game or was engaged in some activity with a resident, the staff member must have been attending to either the game or the resident in order for the interaction to be scored as appropriate. An inappropriate interaction was recorded if a staff member responded in any other way to a resident behaving appropriately or responded as described above to a resident behaving inappropriately.

Resident behavior. A resident was defined as behaving appropriately when he was sitting, standing, or walking quietly without engaging in stereotypies, using materials for the purpose they were intended, or engaging in conversation or cooperative play with a resident or staff member. Any other behavior was considered inappropriate by definition.

Reliability

Reliability was taken on both the experimenter and the generalization observers during all but one condition (A_2). The observer used for reliability was absent from work in Condition A_2. The procedure for taking reliability was independent observation by two observers using the same observation procedure. The same observer was used to assess reliability with the experimenter and each of the two generalization observers in the first four conditions, and reliability was assessed between the experimenter and each of the

two generalization observers in the last two conditions. Reliability estimates were calculated as inter-observer agreement using the formula: agreements/(agreements + disagreements) X 100%. An agreement was defined as identical scoring of the same staff member's behavior during the same time-sample observation.

Experimental Conditions

Design. The experimental design used was $A_1BCA_2A_3D$.

Baseline (Condition A_1). Observations were taken each day for 10 days, but no feedback was given to the staff during this condition. The experimenter told the staff that he was doing research for a thesis and would observe how they interacted with residents on the unit. Also, staff were told that all that was being asked of them was that they try to be in the day hall as much as possible during the session.

Amount and quality feedback (Condition B). At the beginning of this condition the experimenter met with the staff and gave the instructions for this condition (see Appendix A) which was in effect for 10 days.

Following each observation session the mean percent of time-samples staff were interacting appropriately was written on an 8-1/2 x 11 inch sheet of paper which was posted on a wall in the day hall. Then each staff member was told privately his/her percent of time-samples interacting appropriately for that session. If the criterion percentage

had been met, the staff member was praised for having done a good job interacting with the residents that morning.

The data collected in the baseline sessions (Condition A_1) were used to establish the criteria for each staff member's receiving praise in Conditions B and C. The criteria were established by adding 20 percentage points to each staff member's mean percentage during baseline for both percent of time-samples interacting appropriately and percent of time-samples interacting with different residents (see Table 1).

Amount, quality, and diversity feedback (Condition C). At the beginning of this condition the experimenter again met with the staff to explain the change in conditions (see Appendix A). For nine days the experimenter gave feedback and praise following the session both on the percent of time-samples staff interacted appropriately and on the percent of time-samples staff interacted with different residents. A group average of these percentages was written on an 8-1/2 x 11 sheet of paper with both sheets being posted on the wall in the day hall following each observation session. The experimenter privately told each staff member his/her percentages and praised him/her when either percentage had met the criterion established with the baseline data. If only one percentage had met criterion, praise statements were only made about that percentage.

Reversal (Condition A_2). This condition was a return

Table 1

Criteria for Delivery of Praise within Sessions for Conditions B and C

Subject	Percent of Time Appropriately Interacting	Percent of Resident Interacted With
1	46	40
2	20	20
3	45	45
4	29	27
5	52	50
6	22	22

Table 2

Criteria for Delivery of Praise within Sessions for Condition D

Subject	Percent of Time Appropriately Interacting	Percent of Residents Interacted With
1	28	28
3	38	38
4	20	20
5	20	20

to baseline conditions for three days. The session and generalization observations continued to be made, but no feedback was given to the staff as a group or individually following each session. The staff were not informed of this change in conditions.

Baseline (Condition A_3). For four days observations were made during a three-hour session in which the experimenter randomly entered the day hall approximately 12 times to observe for varying periods of time. No feedback was given at the end of the sessions. The staff were told that due to a car pool change, the experimenter would have to be at the hospital-school all morning and would be dropping in to observe from time to time rather than remaining on the unit for one hour.

Amount, quality, and diversity feedback (Condition D). The staff were again given instructions at the beginning of the condition (see Appendix A). Observations were made during a three-hour session as in Condition A_3 for seven days, and feedback was given at the end of the session on individual and group percentages as in Condition C. The criteria for each staff member's receiving praise in this condition were established with the baseline data collected in Condition A_3 using the same method as in Condition B.

Chapter 3

RESULTS

Reliability Data

The mean percent agreement between observers in the session over all conditions was 83% and ranged from 75% to 89%. The mean percent agreement across conditions for one of the generalization observers was 94% and ranged from 84% to 100%, while the other observer had a mean of 97% ranging from 84% to 100%. The reliability checks were made once in each condition except Condition A_2 on all observers.

Due to the low levels of staff behavior during the generalization checks, much of the reliability data generated during the generalization checks was based on non-occurrence of the behavior. Since including agreement on non-occurrence of a behavior can inflate a reliability estimate when responding is at a low rate, a check for reliability on occurrence of the behavior was performed. The numbers of agreements and disagreements on the occurrence of the behavior were summed across all reliability checks, and one reliability estimate was computed with the formula used previously. The percent agreement between observers on occurrence of the behavior for both generalization observers over all conditions was 67%.

Experimental Data

Group data. Figure 1 shows the average percentage of time-samples staff were interacting appropriately during each session across all conditions. The mean percentage during Condition A_1, baseline, was 17% with a range from 0% to 46%. In Condition B, when feedback and praise were given for the percentage of time staff were interacting appropriately, the mean percentage increased to 40%, ranging from 25% to 63%. In Condition C, giving feedback both on the percentage of time staff interacted appropriately and on the percentage of residents interacted with again produced an increase in the percentage of time staff interacted appropriately to a mean of 63% with a range from 39% to 91%. A return to baseline conditions in Condition A_2 resulted in a decrease to a mean of 35% of time staff interacted appropriately, ranging from 28% to 40%. During Condition A_3, when baseline conditions were extended to a three-hour session, staff interacted appropriately in an average of 6% of the time-samples. In Condition D, when feedback was given on staff behavior in the extended session, staff interacted appropriately in 28% of the time-samples with a range from 14% to 41%.

Also shown in Figure 1 is the average percentage of time-samples staff interacted appropriately during generalization checks. The mean percentage of time-samples staff were interacting appropriately remained relatively unchanged across all conditions during generalization checks. The mean

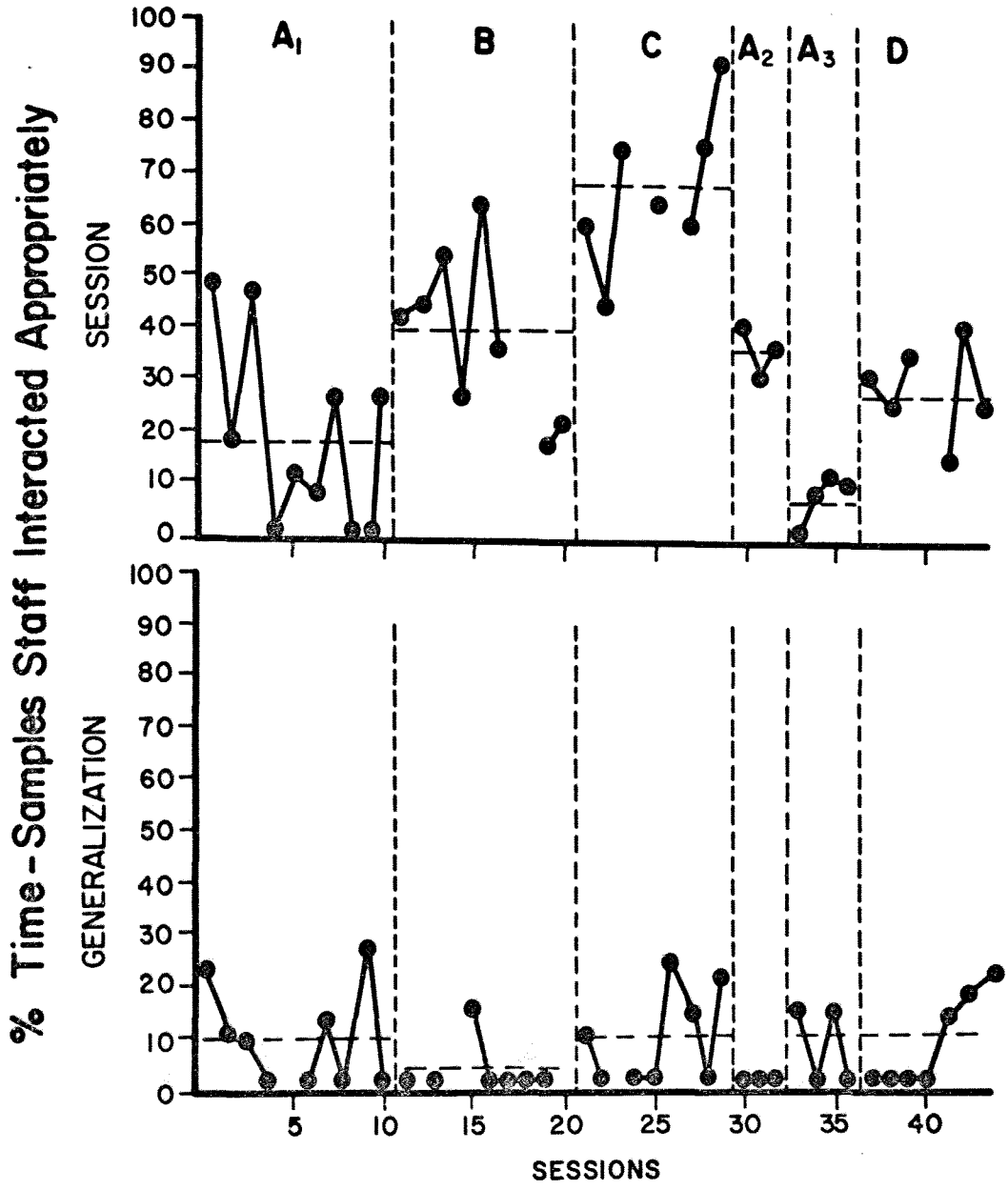

Figure 1. Percent of time-samples staff interacted appropriately during the session and generalization check per session under baseline and feedback conditions.

percentage of time staff were interacting appropriately was 9% in Condition A_1, dropped to 2% in Condition B, increased to 8% in Condition C, dropped again to 0% in Condition A_2, rose to 7% in Condition A_3, and remained at 7% in Condition D. The percentages were quite variable in Condition A_1, when the range was from 0% to 27%. Other than Condition A_1, only Condition C with a range from 0% to 23% showed a variation greater than 20 percentage points.

Figure 2 shows the average percentage of time-samples staff were interacting with different residents during each session across all conditions. The mean percentage of time-samples staff interacted with different residents was 13% in Condition A_1 and ranged from 0% to 46%. In Condition B the percentage increased to a mean of 33% ranging from 17% to 50%. When feedback was given on the percentage of time-samples staff interacted with different residents in Condition C, the mean percentage rose to 56%, ranging from 39% to 75%. A return to baseline in Condition A_2 resulted in a decrease to a mean of 32% with a range from 19% to 40%. Staff interacted with different residents in an average of 6% of time-samples in Condition A_3 which increased in Condition D, when feedback was re-implemented, to a mean of 28%, ranging from 14% to 41%.

The percentage of time-samples staff interacted with different residents during generalization checks is also shown in Figure 2. The percentages showed little variation across conditions with the means being 7% in Conditions A_1,

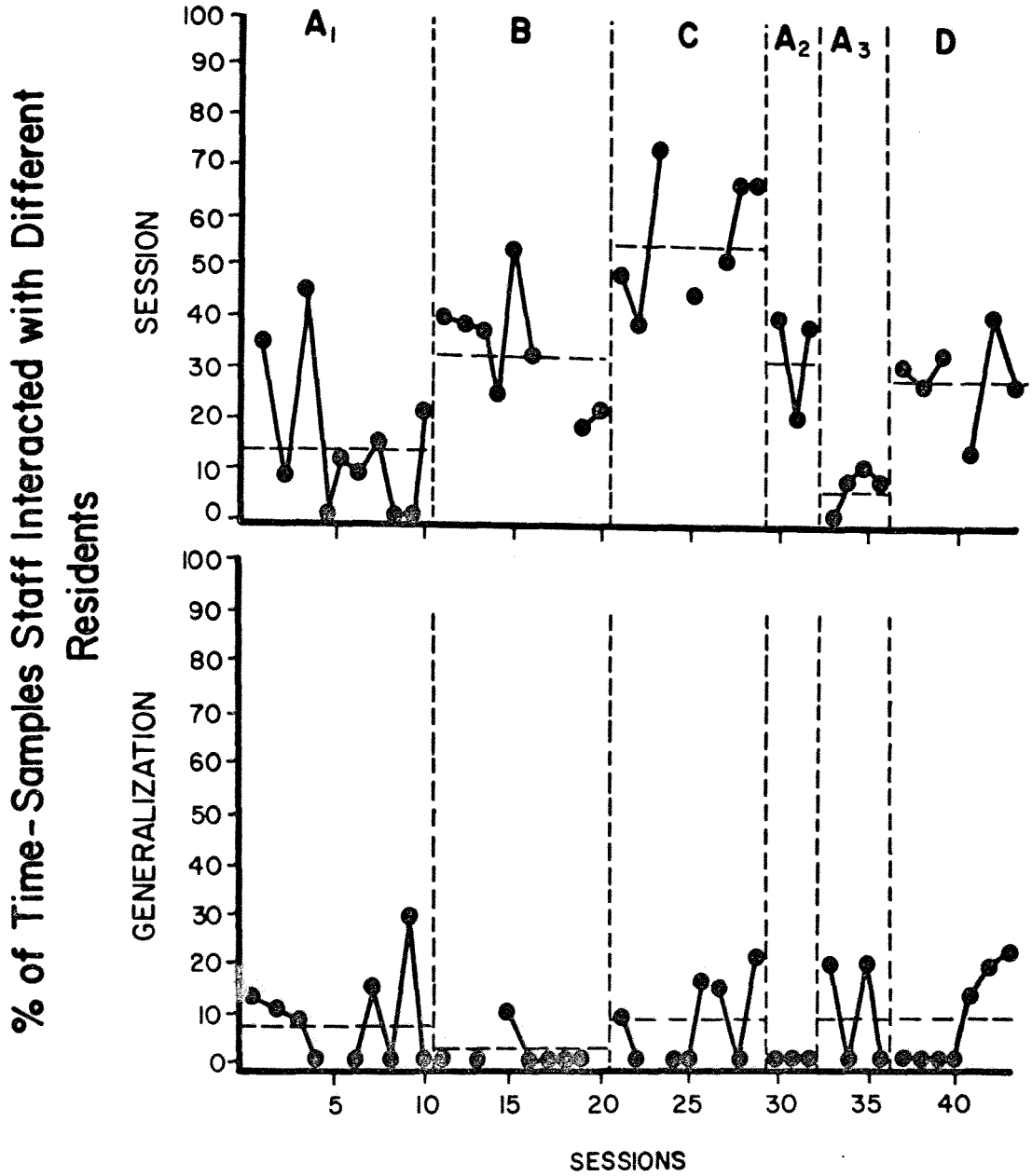

Figure 2. Percent of time-samples staff interacted with different residents during the session and generalization check per session under baseline and feedback conditions.

C, A_3, and D, 2% in Condition B, and 0% in Condition A_2. The range of percentages within conditions varied from 27 percentage points in Condition A_1 to 0 percentage points in Condition A_2.

The percentage of time-samples staff were interacting appropriately during the session in Condition D was calculated separately for three time periods within the session to assess the extent of stimulus control of the time of the session over staff behavior. The daily percentages were calculated separately for the interactions that occurred in the first, second, and third hours of the session (see Figure 3). During the first hour the mean percentage of time-samples staff interacted appropriately was 33% and ranged from 20% to 67%. The mean percentage was 27% for the second hour, ranging from 0% to 50%. Staff interacted appropriately an average of 22% during the third hour of the session in Condition D with a range from 0% to 75%.

Individual data. The data for each of the subjects are shown in Appendix B. Most of the subjects' data are representative of the group data in terms of trends across conditions for both the session and the generalization checks. However, the variability is significantly greater in the individual data than the group data. The subjects on whom the most data were collected tended to be most representative of the group in terms of agreement between individual and group data.

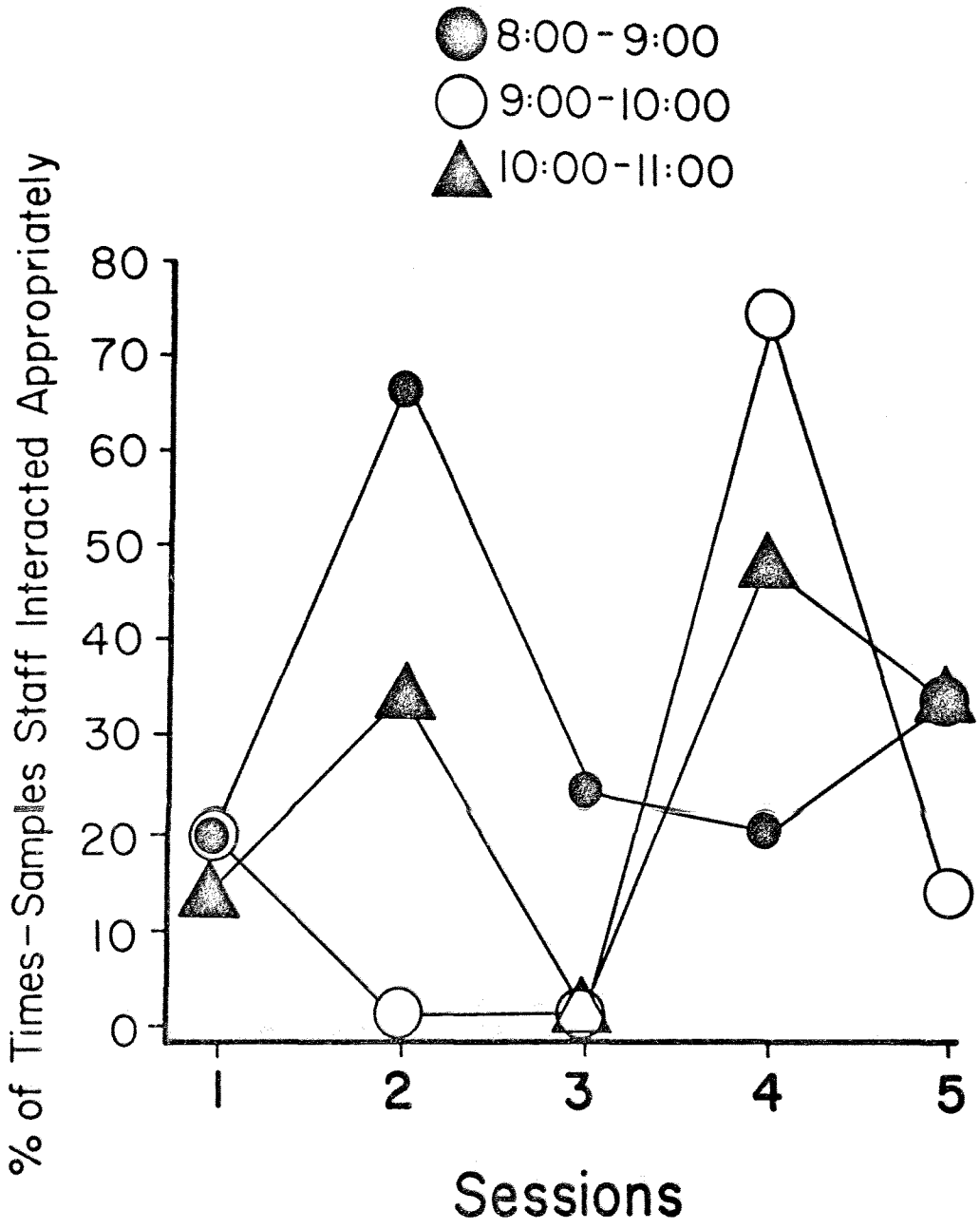

Figure 3. Percent of time-samples staff interacted appropriately in each of the three session hours per session in Condition D.

A minimum number of two observations per day was required of each staff member. Thus, if a staff member was observed only once, then the data for that day were not calculated. Also, staff members were not consistently on the unit due to scheduled days off, sick days, etc., or because of off-unit duties during observation times. Data were also lost when one subject resigned and another terminated after only one training condition.

Chapter 4

DISCUSSION

A simple feedback procedure, combining posted group feedback with individual feedback and praise following daily observations, was successful in increasing the percent of time staff spent interacting appropriately with residents in a state institution for the retarded. This increase in staff behavior, however, occurred only during the observation period when the experimenter was present and did not generalize to those times of the day when observations were made unobtrusively by employees of the institution. Also, appropriate staff interactions were increased using the feedback procedure when the session was extended to a three-hour session, but the level of staff interactions was lower than in the one-hour sessions. Again, the increase in staff behavior failed to generalize outside the session.

During the session, appropriate staff interactions were at a low level in baseline but increased by over 100% in Condition B, when feedback on amount and quality of interactions was presented at the end of the sessions, and increased by 300% in Condition C, when the feedback also included reporting the percentages of time-samples staff interacted with different residents. Appropriate staff interactions immediately decreased when there was a reversal back to baseline conditions in Condition A_2, indicating that

the feedback and praise contingency was responsible for the increase in appropriate staff interactions during the session. The effect of the feedback was then observed in a longer, three-hour session during which observations were made according to a more random schedule by the experimenter. The baseline condition (A_3) was characterized by a very low level of appropriate staff-resident interactions, but introduction of the feedback conditions (D) resulted again in an immediate increase in the level of appropriate staff interactions although not as high as in the one-hour sessions.

Staff-resident interactions during the generalization checks were at very low levels throughout the study indicating that the feedback effects failed to generalize across settings. The generalization data showed some variability in staff behavior; however, it was variable in all conditions. The differences between the mean percentages in the experimental conditions were insignificant. The large changes brought about during the observation sessions failed to generalize outside the session indicating that the behavior of the staff was under the control of some stimulus in the session environment other than the presence of the residents.

The results obtained during the session replicate the results obtained by Graves (1976) and Poteet (1976) who found that simple feedback can significantly alter staff behavior during free time. Earlier studies in which feedback was

investigated showed changes in staff behavior during structured activities such as increased attending in classrooms (e.g., Cooper, Thompson, & Baer, 1970) and increased number of projects completed in programming sessions in institutions (e.g., Panyan, Boozer, & Morris, 1970; Bricker, Morgan, & Grabowski, 1972). A large part of the day of residents in many institutions for the retarded is spent in free time where there are no structured activities taking place. Although it is an excellent opportunity for informal programming through reinforcing interactions, staff typically perform only police and custodial duties during these times. Thus, the problem is to teach the staff to interact with the residents and to reinforce appropriate resident behaviors. Graves (1976) demonstrated that posted group feedback can effectively increase staff-resident interactions during free time, while Poteet (1976) and the results of this study showed that those interactions can be made contingent on the appropriate behavior of the residents as well.

Data were not taken on appropriate resident behavior in this study. However, a number of studies have shown that a selected behavior or class of behaviors can be modified by consistently attending to desirable behavior and ignoring undesirable behavior (school children, Hall, Lund, & Jackson, 1968; children at home, Herbert & Baer, 1972; and brain-injured children, Hall & Broden, 1967). Thus, considering the amount of time a resident spends in free time, consistent

exposure to correct social contingencies during this time might have a significant effect on the behavior of the resident.

Advantages of using feedback as a procedure for training staff in institutions are its simplicity and low cost. The observation procedure used in this study was a time-sampling technique which allows the observer to engage in other activities and still collect data that closely resemble data taken continuously (Whitehead, 1973). This is important in an institution because it allows supervisory or ward personnel to perform the monitoring functions while carrying out other job duties. In this study, the observers for the generalization checks were two supervisory level employees who were able to collect the time-sample data while performing their usual job duties. This was especially important since the study required that the observations be made unobtrusively, but it is also significant because it demonstrated the practicality of using this procedure in an institutional setting. The procedure was shown to be most practical when the observations were made randomly throughout a three-hour session in Condition D. Although the level of staff-resident interactions was not as high in this condition as when the experimenter was continuously present in the living unit for a full hour as in Conditions B and C, appropriate interactions were still over 400% higher than in the preceding baseline condition. Randomly scheduled time-sample

observations such as those in Condition D can be feasibly carried out by staff without interfering a great deal with other job duties but still result in effectively modifying the behavior of the staff on the living unit.

Feedback to staff on their performance has traditionally been conceptualized as a positive reinforcement procedure in that staff behavior is reinforced by the contingent presentation of the feedback and/or praise, thereby resulting in an increased level of the behavior in the future. However, an alternative explanation of why feedback is effective in controlling staff behavior is that the feedback functions to remove or reduce some aversive stimulus in the situation such as the threat of a poor evaluation or the disapproval of the experimenter or supervisor. Thus, changes in staff behavior produced by performance feedback may be under the control of negative reinforcement rather than positive reinforcement.

Anecdotal evidence from this study supports the conceptualization of the feedback contingency as a negative reinforcement procedure. Throughout the study the subjects responded to the experimenter and the morning sessions as if both were aversive stimuli. For example, at the beginning of the first feedback condition, several subjects requested that the group feedback sheet not be posted in the office or coffee room where people from another unit could view it but rather that it should be posted on the living unit. Also in

the first feedback condition, it became obvious that some of the subjects were avoiding the session by going to the office to chart or perform some other duty when the experimenter arrived to begin the morning session. The subjects also avoided the session by taking a break or leaving early for lunch during the session. The subjects' supervisor confirmed the experimenter's observation that the staff did appear to be avoiding the session.

Statements were made to the experimenter by the subjects during the study that also indicated the feedback was aversive. Common responses were statements that the feedback was unfair since there was a staff shortage or that the experimenter was treating the staff like children. Some subjects frequently asked when the study would be completed and indicated that they looked forward to that time. One subject, who appeared to avoid the experimenter at the end of the sessions when the individual feedback was being given, eventually stated that she "just did not want to hear those numbers."

Since avoidance of the situation is a common side effect of an aversive control technique such as negative reinforcement (Skinner, 1953), then these observations suggest that the feedback procedure was negatively rather than positively reinforcing the behavior of the staff. That is, the staff were responding not to obtain positive feedback but to avoid negative feedback on their performance. Other experimenters have reported similar reactions by institutional

staff to feedback procedures (Graves, 1976; Poteet, 1976).

There still remains the question of why feedback on poor performance is so aversive that staff will work hard to avoid it. One possibility is that subjects thought that a job evaluation would be based on their performance in the experimental session. Another possibility is that the subjects were responding to avoid disappointing the experimenter. Not complying with the experimenter's instructions to increase interactions could be aversive for the subjects since they all volunteered to be participants in the study.

The anecdotal evidence described above only suggests that the feedback procedure is a form of aversive control. Research is certainly warranted to investigate whether the procedure does constitute negative reinforcement, and, if so, what is the aversive stimulus. The findings of this research might have both practical and ethical implications for using feedback procedures as a technique for training staff in institutions. For example, if it were found that the procedure is in fact aversive control, then there may be questions about the ethics of adding aversive stimuli to the work situation. Also, if it were determined that disappointing the non-staff experimenter is a controlling variable, then the procedure may have different results when feedback is given by a staff member.

The purpose of this study was to demonstrate that bringing the behavior of the staff under the discriminative

control of the presence of the residents would increase generalization of this behavior to other times of the day. Unfortunately, no generalization of the feedback effects was observed during the generalization checks. The behavior of the staff was apparently under the control of some stimulus in the session other than the presence of the residents. It is possible that the staff were under the discriminative control of the time of day since the sessions were at the same time each day. This would account for the results of the generalization checks because they were performed at different times later in the day. If the time of day was the controlling variable, then you would expect staff-resident interactions to occur at a higher rate during the session time, 9:00-10:00 AM, relative to other times of the day. Yet, when the session was extended to three hours in Conditions A_3 and D, it was found that staff-resident interactions were equally as high in the hours 8:00-9:00 AM and 10:00-11:00 AM as in the previous session time 9:00-10:00 AM, which suggests that the time of day was not the controlling variable.

A major change that occurred in the setting during the session was the presence of the experimenter who observed and gave feedback. The possibility that the experimenter was the discriminative stimulus to which the staff responded is supported by both experimental and anecdotal evidence. The generalization checks made in the absence of the experimenter

showed that staff-resident interactions were at very low levels during all conditions. Only one session condition's mean was lower than the highest mean of any generalization condition, and this session condition was a baseline condition in which the experimenter for the first time began appearing on the ward randomly for short periods of time rather than being present continuously. Secondly, the levels of staff-resident interactions in the session during Conditions A_1, B, C, and A_2 were considerably higher than in Conditions A_3 and D when the presence of the experimenter was changed from continuous to intermittent. Although the same number of observations was taken in all conditions within a session, the experimenter was physically present less of the time in Conditions A_3 and D. While the design of this experiment does not allow one to conclude that the experimenter's presence was controlling the behavior of the staff, the data strongly suggests such a relationship.

The failure of treatment effects to generalize across settings limits the usefulness of procedures such as feedback. The feedback becomes less practical when you must be monitoring the performance of the staff constantly. The extension of the session from one to three hours was an attempt to extend the contingency to a greater part of the day without requiring more time spent in monitoring the staff. The result of this procedure was a very low level of staff behavior under baseline conditions and an increase to a moderate level

when the feedback contingency was introduced. If feedback on performance is to be useful procedure in an institutional setting, then it appears that a spot-check method of time-sampling as used in Condition D might be a reasonable alternative. However, more research will be needed to answer questions such as how frequent observations and the reporting of feedback should be in order to maintain an acceptable level of staff-resident interactions.

Further research is also needed to investigate the role of the experimenter as the observer and the source of feedback. It is likely that the status of this person in relation to the staff may be an important variable in determining what effects are produced in the behavior of the staff. For example, the fact that the experimenter was conducting research temporarily is a special situation that limits the generalizability of the results of this study to a situation in which staff perform the feedback function. Since staff will ultimately be carrying out the procedure, their ability to give feedback that is effective in changing staff behavior should be demonstrated.

Given the constraints placed on supervisory staff in many institutions today such as low salaries for attendants, policies prohibiting the use of compensatory time as a reward, etc., it appears that feedback on performance may be used increasingly in the future. This study demonstrated that posting group feedback and giving individual feedback and

praise can greatly increase the amount of appropriate staff-resident interactions in a ward setting where an observer is present continuously. Also, extending the same number of observations to a longer session in which the observer's presence was intermittent and random was shown to moderately increase staff behavior. However, the procedure was also found to be aversive to the staff which not only suggests that the traditional conceptualization of feedback as a positive reinforcer may be false but also points to the need for future research to analyze more carefully feedback contingencies. The failure of the behavior change to generalize outside the session shows the limited nature of the feedback as a practical means of training staff; however, the possibility of using the feedback procedure in a spot-check fashion deserves investigation to determine the parameters that yield the greatest benefit/cost ratio in terms of amount of staff behavior change/monitoring time. And finally, the feedback procedure should be replicated using actual staff members as the source of control in order to show that the effects reported in this and earlier studies are not limited to special situations such as research projects where an experimenter temporarily intervenes and performs the feedback operation as a demonstration.

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APPENDIX A

CONDITION INSTRUCTIONS

CONDITION B INSTRUCTIONS

In the past few weeks I have been observing your interactions with the residents by time-sampling. Every five minutes I look to see how each of you are interacting with residents. I have noticed that some of these interactions are positive, some are negative, and some are neutral. Examples of positive interactions are smiling at, praising, and giving affectionate physical contact, tokens, or play materials to residents who are behaving appropriately. Negative interactions include reprimanding or taking to isolation residents who are behaving badly. Neutral interactions include such things as simply talking to, dressing, or grooming residents.

Beginning today I will calculate at the end of the session the percentages of my observations that each of you were positively interacting with residents. Then I will approach each of you individually and tell you your percentage for the session. Although you may share this information with other staff members if you desire, I will tell no one's percentage to anyone else. In addition, I will average all of your percentages and post this in the office as a group average. Also, a chart will be kept in the office on which these percentages will appear in the form of a graph.

As I said before, your percentages are determined from time-samples. While time-sampling allows me to observe all

of you several times during the session, it prevents me from seeing all of your interactions. For this reason I may occasionally report to you a percentage that is low even though you positively interacted several times. However, in the long run the percentages will be fairly accurate. If ever you have any questions or comments, feel free to talk to me at any time.

CONDITION C INSTRUCTIONS

Since I've been reporting your interaction percentages to you, there has been a noticeable increase in the number of positive interactions during the times I've observed. I would like you to know that this is a nice improvement, and if it continues, an improvement may be noticeable in the residents' behavior.

Generally, on living units such as this, staff have a tendency to spend most of their time interacting with a few particular residents for some reason or another. This is typical and one reason may be simply that it is more rewarding to interact with a resident who is more responsive than the others. The problem with this is that some residents tend to be ignored and their chances for improvement are thereby reduced. So it would be in the best interest of the group if each resident received a more or less equal amount of attention.

When recording your interactions, I note what resident you were interacting with, and from this I determine a percentage of residents interacted with per opportunity. For example, if I observed one of you six times, and if four of those times you were positively interacting with the same resident, then you would have a percentage of 67% for positive interaction and 16% residents interacted with per opportunity. If, on the other hand, you had interacted positively with

four different residents during the six observations, your percentage would be 67% residents interacted with per opportunity. Beginning today I will tell you both positive interaction and residents interacted with percentages and will post the group averages as before.

CONDITION D INSTRUCTIONS

At the beginning of this study I was observing your interactions with residents for only one hour. After I began giving you feedback at the end of the hour, the percent of observations that you were positively interacting increased over 100%. When I began reporting to you both this percentage and your percentage of residents interacted with, both percentages increased by 300%. This was really quite an achievement on your part, and I think you were doing a very good job interacting with the residents.

As you know, I am now making the observations over the entire morning by randomly dropping by or looking in on the unit. Many of these times I am unable to observe you either because you're not in the day room area or, if you are, you are busy with some kind of ward work. On these occasions I do not record anything. However, my observations have revealed that of the opportunities you do have to interact, your percentages of interactions are close to what they were at the beginning of this study. Since giving you feedback worked so well during the one-hour sessions, I am now going to give you feedback again in the same way. The only difference will be that the observations will be taken throughout the morning with your percentages being reported at lunch.

APPENDIX B

INDIVIDUAL DATA

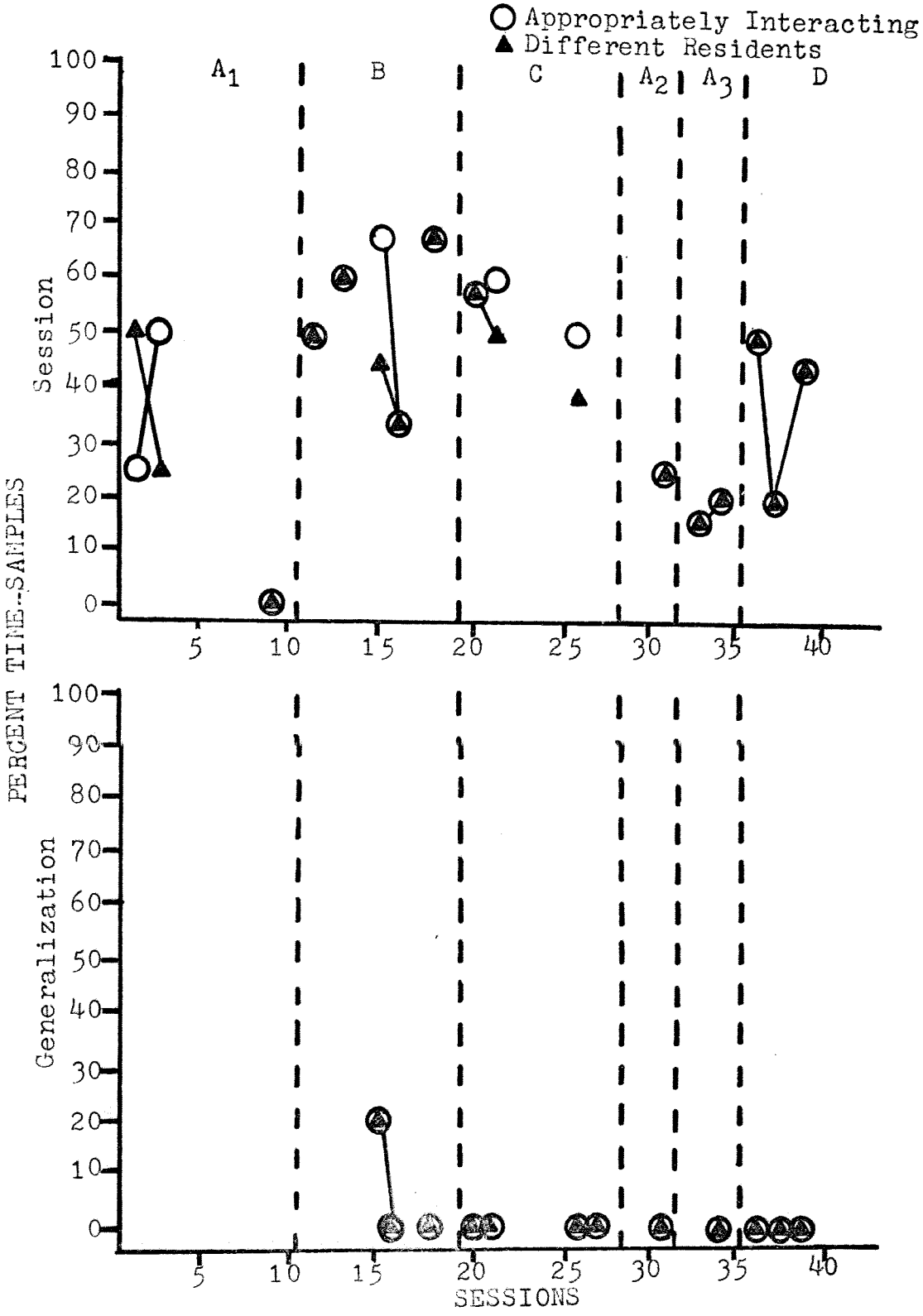

Figure 4. Percent of time-samples Subject 1 interacted appropriately and interacted with different residents in the session and generalization check per session as a function of the feedback contingency.

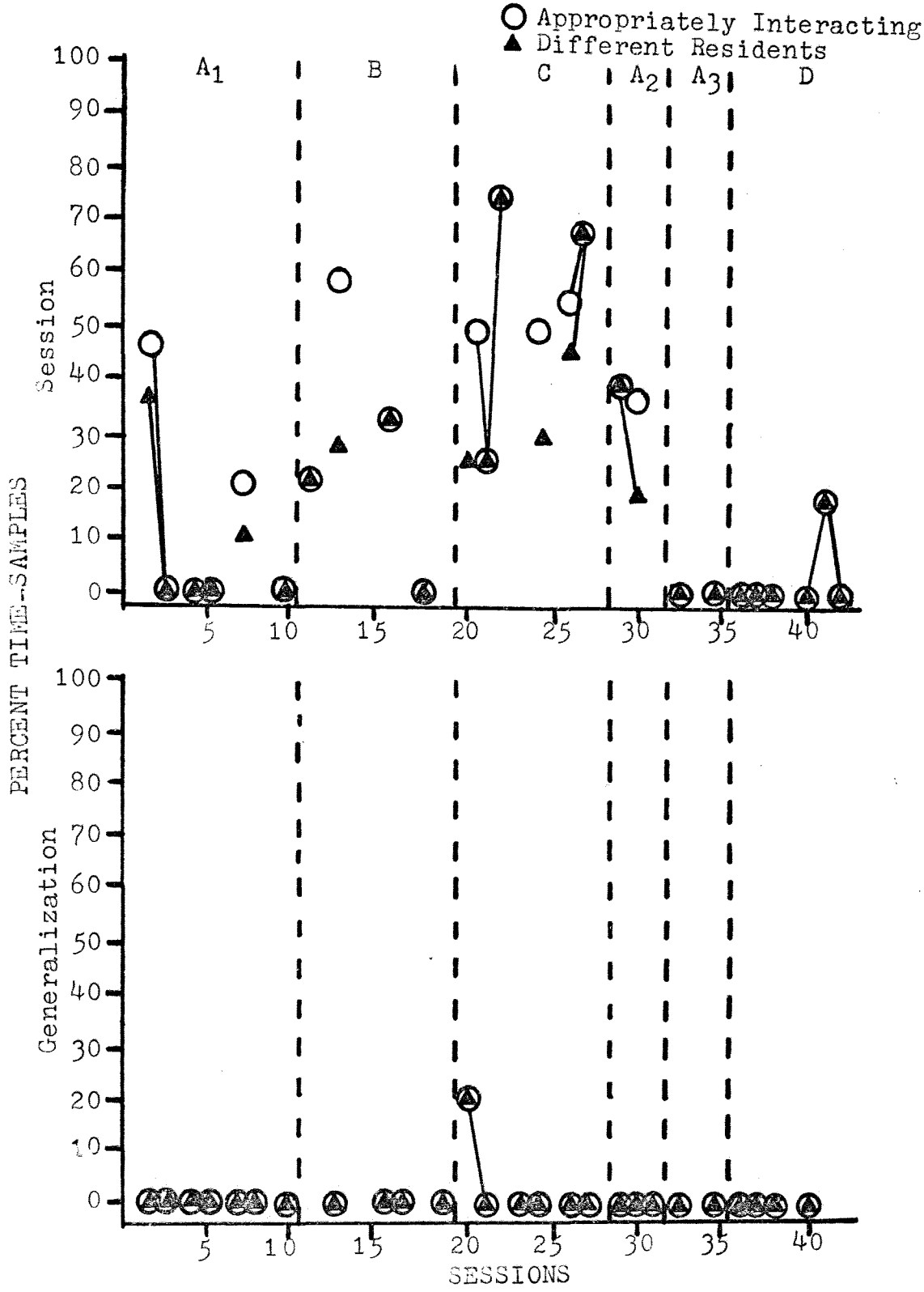

Figure 5. Percent of time-samples Subject 2 interacted appropriately and interacted with different residents in the session and generalization check per session as a function of the feedback contingency.

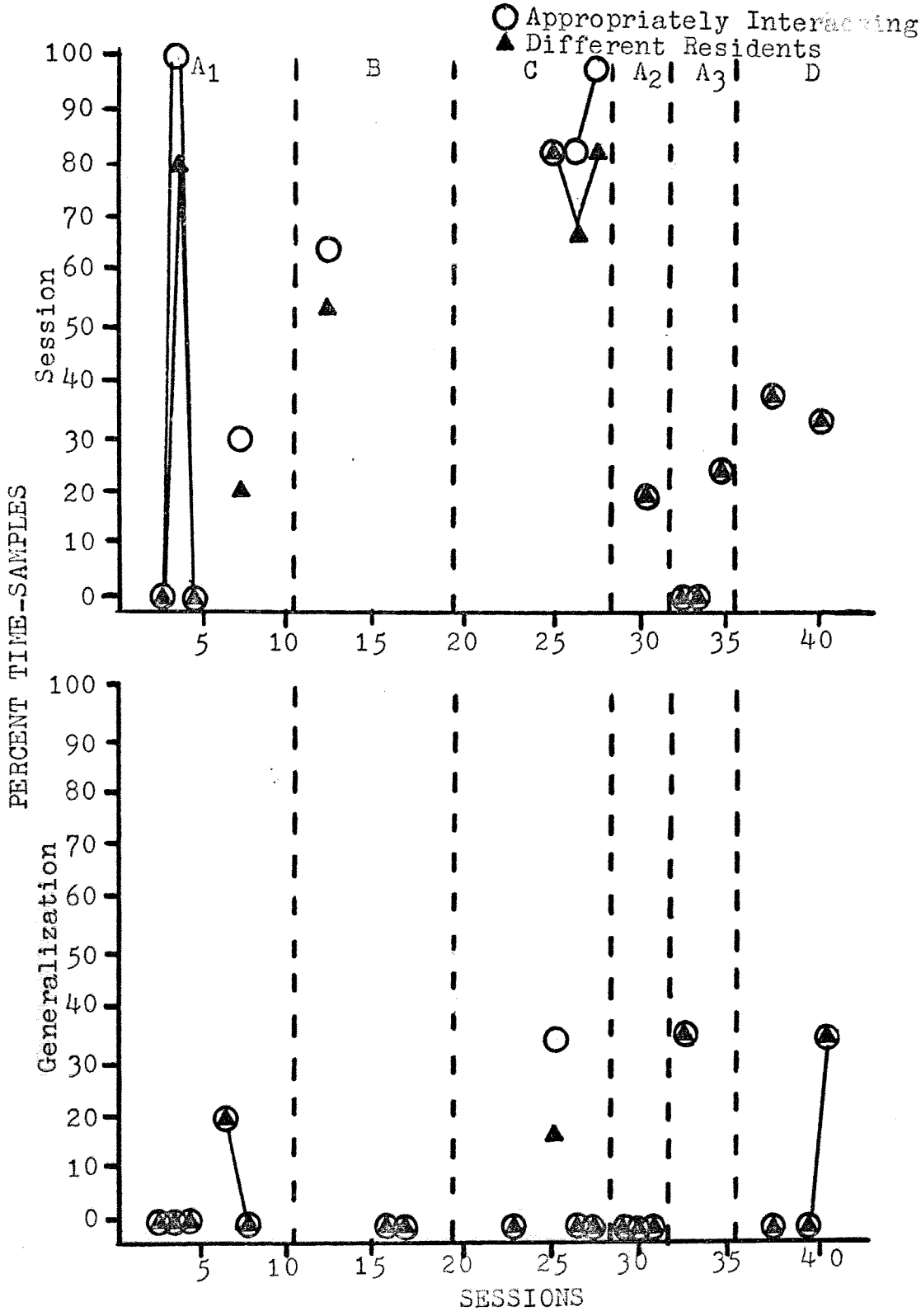

Figure 6. Percent of time-samples Subject 3 interacted appropriately and interacted with different residents in the session and generalization check per session as a function of the feedback contingency.

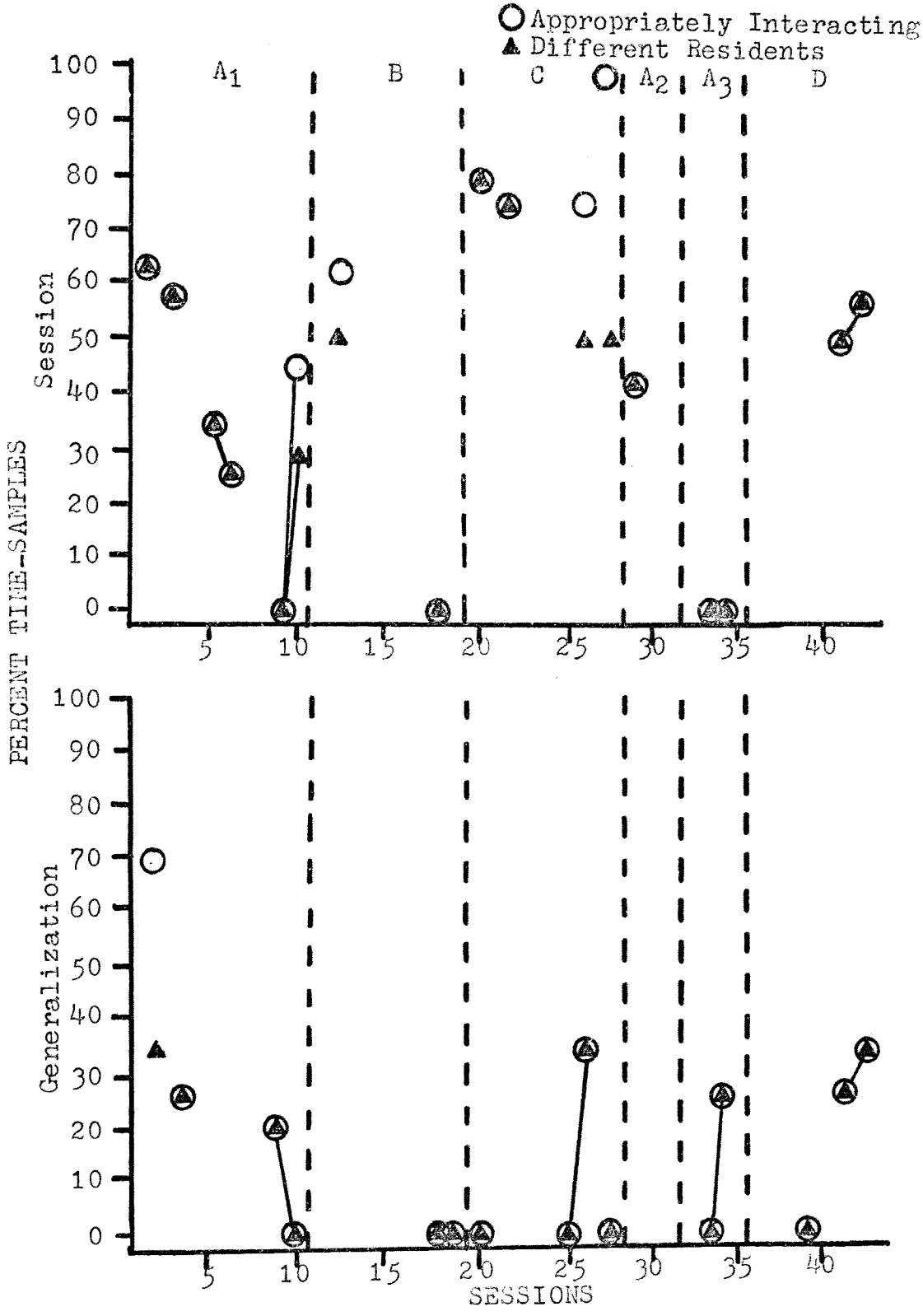

Figure 7. Percent of time-samples Subject 4 interacted appropriately and interacted with different residents in the session and generalization check per session as a function of the feedback contingency.

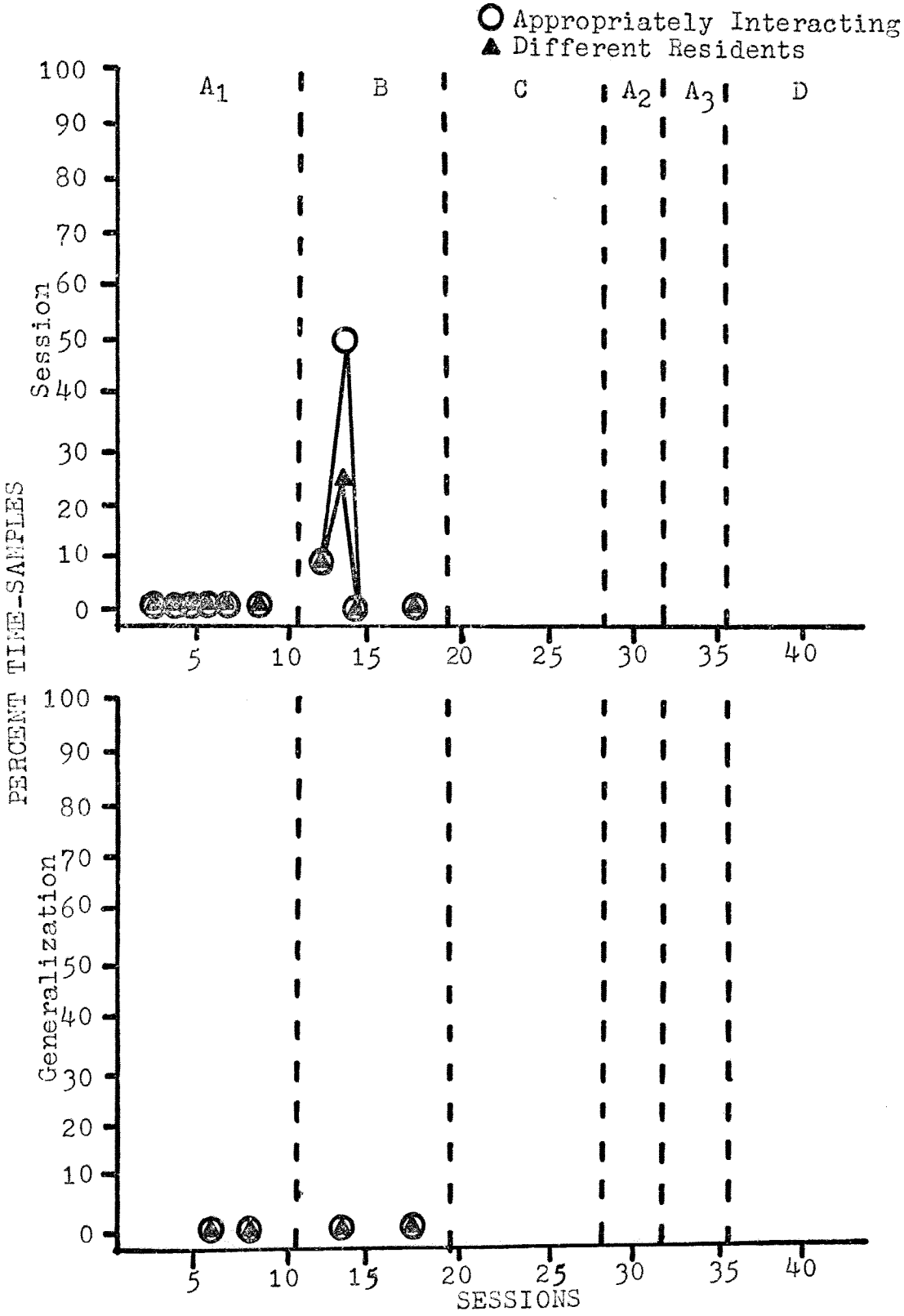

Figure 8. Percent of time-samples Subject 5 interacted appropriately and interacted with different residents in the session and generalization check per session as a function of the feedback contingency.

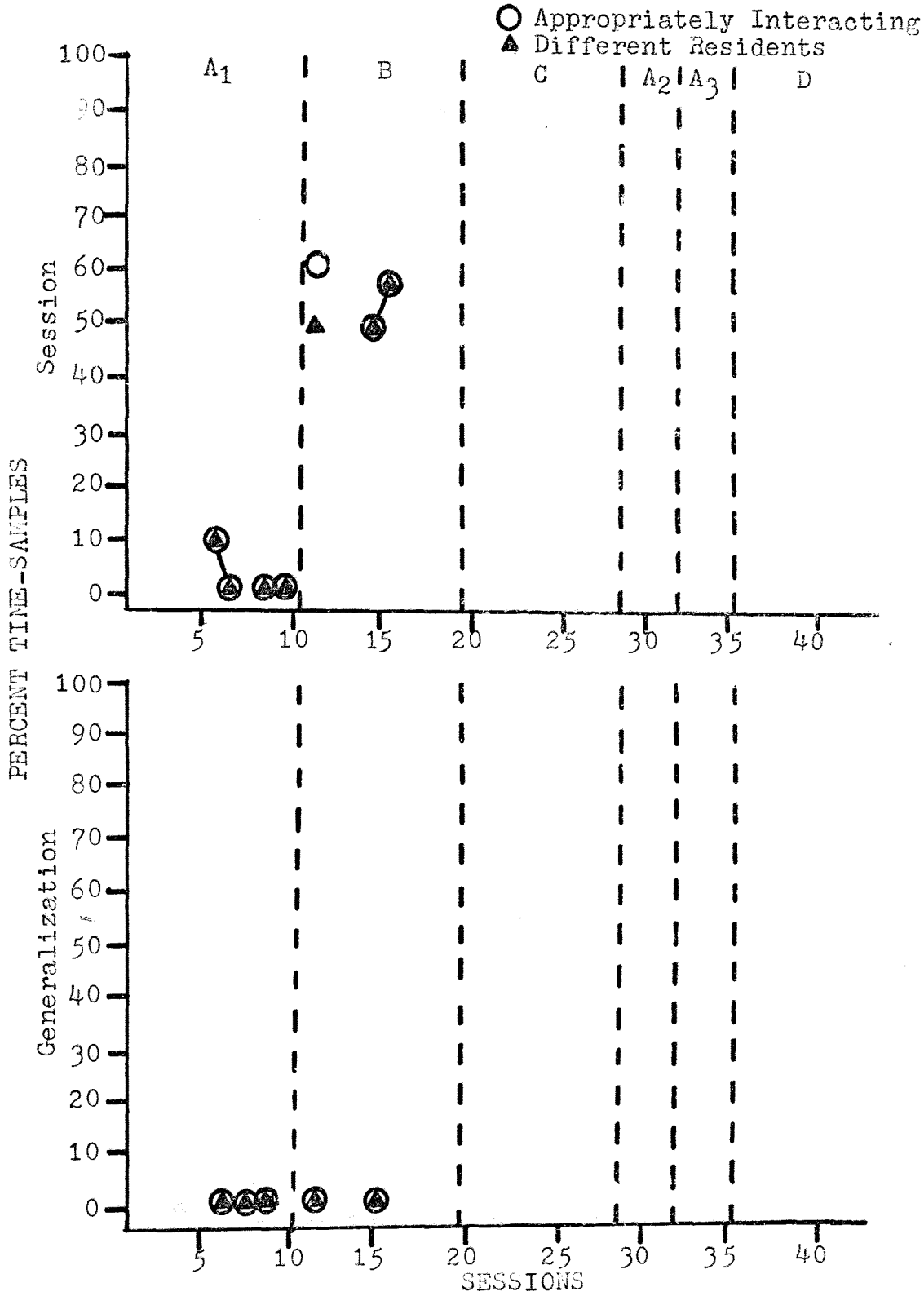

Figure 9. Percent of time-samples Subject 6 interacted appropriately and interacted with different residents in the session and generalization check per session as a function of the feedback contingency.